Chapter 8

Prevalence of Mental Disorders and Contacts with Mental Health Professionals Among Adults in the United States: National Health Interview Survey, 1999

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Introduction

Evidence of severe morbidity associated with mental disorders relative to other classes of long-term illness continues to accumulate (Kessler et al., 1994; Robins and Regier, 1991; Wells et al., 1989). Individuals suffering mental illness often do not get treatment or receive only minimally effective treatment (Alegria et al., 2000; Katz, et al., 1998; Olfson, et al., 1998; Wang, et al., 2002), in part because many people with mental health problems do not seek the attention of mental health care providers.

This chapter presents data from the 1999 National Health Interview Survey (NHIS). Conducted by the National Center for Health Statistics (NCHS), Centers for Disease Control and Prevention (CDC), it describes the 12-month prevalence of specific mental disorders among adults 18 and older in the United States. On the basis of specific diagnostic criteria, adult survey respondents could be classified as having (1) major depression, (2) generalized anxiety disorder, and (3) an occurrence of a panic attack. Also presented are levels of impairment due to problems associated with these specific mental disorders. Finally, this chapter reports on national estimates of health service contacts that may be associated with mental disorder and identifies correlates of health service contact. These results provide a followup to the 1992 findings from the National Comorbidity Survey (NCS) (Kessler et al., 1994) using a larger and more diverse sample.

Data and Methods

Data Source

The NHIS is an annual multistage probability household survey that collects comprehensive health-related information from a large sample representing the civilian noninstitutionalized household population of the United States. In general, data are collected on an array of health topics and health status measures to monitor the health of the nation. The face-to-face survey interview is administered by trained field representatives from the United States Bureau of the Census. This chapter focuses on data from the 1999 survey, which included supplemental questions designed to collect information on mental disorders in the U.S. adult population. Estimates presented in this chapter are based on data weighted to account for the complex sample design. "Population All" group comparisons discussed in this chapter are statistically significant ($p < .05$) on the basis of tests using statistical software that accounts for the sample design.

Survey Respondents

Within each responding household, one adult was selected randomly for a more detailed health assessment. Eighty-one percent of the randomly selected adults completed this "sample adult" interview. When household and family nonresponse are also considered, the response rate was 70 percent. Altogether, data were available for 30,801 randomly sampled adults.

Definitions

Mental disorder. Information on mental disorders within the past 12 months among adult survey respondents was obtained using the Composite International Diagnostic Interview—Short Form (CIDI-SF), which is an abridged version of the Composite International Diagnostic Interview (CIDI) and

was developed by the World Health Organization (WHO). Scoring procedures can be found at the WHO Web site (http://www.who.int/msa/cidi/). The CIDI, the CIDI-SF, and the WHO's scoring procedures were developed so that determination of mental disorder followed diagnostic criteria established by the *Diagnostic and Statistical Manual*, 4th Edition (DSM-IV).

Although the CIDI-SF was developed to assess several psychiatric outcomes, the 1999 NHIS only included questions on the assessment of three mental disorders: (1) *major depression* (including major depression that occurs as part of bipolar disorder or schizoaffective disorder), (2) *generalized anxiety disorder*, and (3) *panic attack*. The screening process for these mental disorders followed a stem question procedure. If a respondent answered "yes" to a stem question or a set of stem questions, further questioning was conducted to evaluate whether the respondent met the criteria for the disorder. The stem questions in the three major categories were as follows:

- *Major depression*: The stem questions asked whether respondents (1) felt sad, blue, or depressed for at least two weeks within the past 12 months and (2) had lost interest in most things for at least two weeks within the past 12 months. In addition to positive responses to one of these stem questions, respondents had to report feeling this way almost every day for at least most of the day. Questions concerning depressive symptomatology (e.g., feeling tired, trouble concentrating, feeling worthless) were then asked to determine whether criteria for major depression were met. Alternatively, respondents reporting having taken antidepressant medication within the past 12 months also met the criteria for major depression.

- *Generalized anxiety disorder*: To evaluate whether respondents met criteria for this disorder, the survey required that they first respond "yes" to either (1) feeling worried, tense, or anxious for at least one month within the past 12 months or (2) worrying more than most people for at least one month within the past 12 months. Respondents also had to report that this period of anxiety lasted at least six months. Furthermore, respondents had to describe their worry during this period of anxiety as being stronger relative to that of others; being present most days; being multiple in number, including experiencing more than one worry at one time; and being difficult to stop and control. Questions on anxiety symptomatology (e.g., restlessness, irritability, racing heart) were then asked to determine whether criteria for generalized anxiety disorder were met.

- *Panic attack*: To determine whether respondents experienced a panic attack, the survey asked if they could recall a spell/attack when they felt frightened, anxious, or uneasy. If this attack occurred in a non-life-threatening, nondangerous situation, respondents were then questioned on a number of panic attack symptoms (e.g., sweating, trembling, hot flashes, or chills) to evaluate whether panic attack criteria were met. It should be noted that CIDI-SF-assessed panic attack was not necessarily reflective of panic disorder. Rather, meeting criteria for a panic attack indicated that the person experienced at least one panic *attack* within the past 12 months. Nevertheless, for ease of presentation in this chapter, when panic attack is grouped with major depression and generalized anxiety disorder, panic attack will be labeled as a mental disorder.

Level of interference. Level of interference with life or activities within the past 12 months due to specific mental health disorders was assessed among respondents who met criteria for either major depression or generalized anxiety disorder. Direct reports of interference were obtained using four response categories: a lot, some, a little, and not at all.

Health service contact. Eight items from the 1999 NHIS were used to evaluate health service contact for the respondent's own health within the past 12 months:

(1) Contact with a mental health professional, such as a psychiatrist, psychologist, psychiatric nurse, or clinical social worker

(2) Visit to a health provider's office, such as a doctor's office or a clinic

(3) Contact with a general physician, such as a doctor in general practice, family medicine, or internal medicine

(4) Contact with a medical specialist other than an obstetrician/gynecologist, psychiatrist, or ophthalmologist

(5) Visit to an emergency room

(6) Surgery, either as an inpatient or outpatient

(7) Overnight hospitalization, not including overnight stays in an emergency room

(8) Care received at home from a nurse or other health care professional

These eight items allowed researchers to create a service contact hierarchy: (1) contact with a *mental health* professional (positive response to the first item); (2) contact with a *health* professional, but not a mental health professional (negative response to the first item, but at least one positive response to the other items); and (3) no contact with a health professional (negative responses to all items).

Long-term health conditions. A variety of items was used to evaluate whether a health professional ever told the respondent that he or she had a selected long-term health condition. Researchers selected six long-term health domains: (1) asthma, (2) cancer, (3) diabetes, (4) heart-related condition, (5) digestive-related condition, and (6) other selected long-term condition.

The first three long-term health condition domains were evaluated using one item each, asking whether a doctor or other health professional ever told the respondent that he or she had asthma, cancer, or diabetes, respectively. The latter three domains were evaluated using multiple items. Items measuring the presence of a heart-related condition included questions on hypertension, high blood cholesterol, coronary heart disease, angina pectoris, heart attack, congestive heart failure, and other heart condition. The two items measuring the presence of a digestive-related condition included questions on ulcer and Crohn's disease/ulcerative colitis. The four items measuring the presence of other selected long-term conditions included questions on stroke, emphysema, osteoporosis, and Parkinson's disease. If a doctor or other health professional had told the respondent that he or she had any condition within the latter three long-term health domains, the respective domain was coded positively. If the respondent reported none of the conditions, the respective domain was coded negatively.

Other analytic variables. Single survey items were used to assess whether cost prevented respondents from receiving any needed mental health care, whether the respondent was covered by health insurance at the time of interview, and whether the respondent was born in the United States (excluding Puerto Rico, Guam, and other outlying territories of the United States).

Results

12-Month Prevalence of Mental Disorders

Figure 1 reveals that within the 12 months preceding the survey, an estimated 6.3, 2.8, and 2.7 percent of the adult civilian, noninstitutionalized population of the United States had major depression, generalized anxiety disorder, and panic attack, respectively. On the basis of these rates, an estimated 12.5 million, 5.4 million, and 5.3 million civilian noninstitutionalized adults living in the United States, suffered from these respective mental disorders within the year preceding the survey. Approximately 8.8 percent of all adults, or approximately 17.1 million adults in the United States, had at least one of these three mental disorders within the past year. Moreover, 2.5 percent of all adults (4.9 million) had at least two of these three mental disorders.

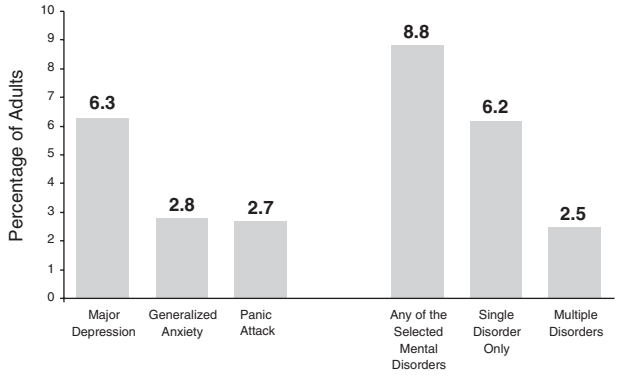


Figure 1. Prevalence Rates for Selected Mental Disorders Among Adults, Past 12 Months: National Health Interview Survey, 1999.

Figure 2 illustrates that the majority of adults with more than one mental disorder had both major depression and generalized anxiety disorder within the past 12 months.

Table 1 indicates that the prevalence rates for these selected mental disorders vary by demographic characteristics. Adults over the age of 65 were less likely to have any of these mental disorders compared with younger adults. Men had lower prev-

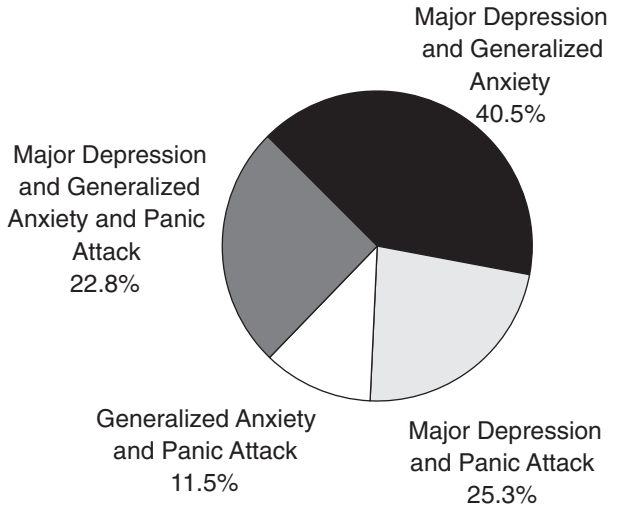
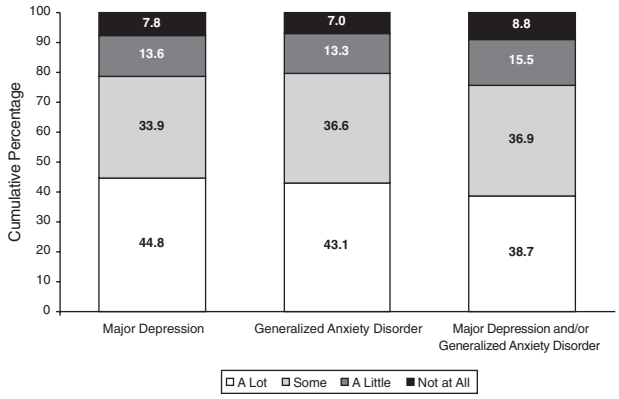


Figure 2. Distribution of Selected Mental Disorders Among Adults With Multiple Disorders, Past 12 Months: National Health Interview Survey, 1999.



[a] Only major depression and generalized anxiety disorder were considered in the evaluation of interference with life or activities.

Figure 3. Proportion of Adults With Selected Mental Disorders Who Experienced Interference With Life or Activities Due to the Mental Disorder, Past 12 Months: National Health Interview Survey, 1999.

alence rates than women. Lower prevalence rates were also observed among adults with the following characteristics: family income greater than $20,000 (relative to those with lower income), college graduates (relative to those with less education), and married persons (relative to those with a marital status other than married). Disparities across racial/ethnic strata were revealed for major depression and panic attack, such that non-Hispanic White adults had higher prevalence rates than Hispanic adults of any race. In addition, except for generalized anxiety disorder, rates of disorder were significantly higher for smaller than for larger metropolitan statistical areas (MSAs) and for non-MSA areas relative to MSAs. Rates were also higher for U.S.-born adults relative to those of foreign birth.

The degree to which major depression or generalized anxiety disorder interfere with life or activities is presented in figure 3. This information was not obtained or analyzed among respondents who only met criteria for panic attack. Approximately 38.7 percent of adults with major depression or generalized anxiety disorder experienced "a lot" of interference. An additional 36.9 percent experienced "some" interference.

Mental Health Service Contacts

Figure 4 presents information on mental health service contact. Among adults with major depression, generalized anxiety disorder, or panic attack, approximately 31.1, 36.3, and 33.0 percent, respectively, contacted a mental health professional within the past 12 months. Taken together, approximately 28.6 percent of adults with any of these three mental disorders contacted a mental health professional. Adults who met the criteria for only one disorder were less likely to have contacted a mental health professional than those with two or three disorders (23.3 percent vs. 41.8 percent), and adults who did not meet the criteria for any of these disorders were even less likely to have contacted a mental health professional (3.2 percent).

On the basis of these rates, approximately 10.4 million adults contacted a mental health professional within the past year. However, fewer than half (4.9 million) had one of the three selected mental disorders studied here. The other 5.5 million adults may have contacted a mental health professional with respect to other forms of mental illness or for assistance coping with other difficulties.

Table 2 indicates that mental health service contact for adults with major depression, generalized anxiety disorder, or panic attack varies according to demographic characteristics. Contact was less likely among adults 65 years of age and older relative to adults 25 to 64 years of age, regardless of the specific mental disorder. (The proportion of adults 65 years of age or older with a mental health service contact was statistically equivalent to the proportion of adults 18 to 24 years of age.) Among adults

Table 1. Prevalence rates for selected mental disorders among adults by demographic characteristics, past 12 months: National Health Interview Survey, 1999

Selected Demographic Characteristic[a]	Selected Mental Disorder			Number of Selected Mental Disorders[b]		Any of the Selected Mental Disorders
	Major Depression	Generalized Anxiety	Panic Attack	Multiple Disorders	Single Disorder	
Total	6.3	2.8	2.7	2.5	6.2	8.8
Age	****	****	****	****	****	****
18–24	6.5	2.7	2.9	2.2	6.9	9.2
25–44	6.6	3.1	3.2	2.9	6.4	9.4
45–64	7.2	3.1	2.9	2.8	6.8	9.8
65+	3.7	1.5	0.9	1.0	3.9	5.0
Sex	****	****	****	****	****	****
Male	4.5	1.9	1.7	1.6	4.4	6.1
Female	8.0	3.6	3.6	3.3	7.8	11.3
Race/Ethnicity	***		*		*	**
Non-Hispanic White	6.6	2.8	2.8	2.5	6.4	9.1
Non-Hispanic Black	6.2	2.6	2.9	2.6	5.8	8.5
Non-Hispanic Other	5.8	2.4	2.0	2.4	4.9	7.5
Hispanic (any race)	4.8	2.9	2.0	1.9	5.4	7.4
Family Income	****	****	****	****	****	****
$20,000 or more	5.6	2.2	2.4	1.9	5.8	7.8
Less than $20,000	9.5	5.1	3.9	4.7	8.0	13.0
Highest Level of Education	****	****	****	****	****	****
Less than high school	7.0	3.8	2.9	3.2	6.5	9.8
High school or some college	6.9	2.9	3.1	2.8	6.7	9.6
College graduate	4.1	1.5	1.7	1.1	4.7	5.9
Marital Status	****	****	****	****	****	****
Married	4.7	2.2	2.1	1.7	5.1	7.0
Divorced/Separated/ Widowed	10.2	4.4	3.7	4.2	8.8	13.3
Unmarried/Single	7.3	3.1	3.4	3.0	6.9	10.1
MSA Size[c]	***		**	**	**	****
1 million or greater	5.7	2.6	2.3	2.2	5.6	8.0
Less than 1 million	6.5	2.7	2.9	2.5	6.4	9.0
Non-MSA	7.3	3.3	3.4	3.1	7.0	10.2
Birthplace	****		****	**	****	****
United States	6.6	2.8	2.9	2.6	6.4	9.2
Other	4.5	2.3	1.7	1.7	4.5	6.3

[a] Chi-square tests evaluating differences in 12-month mental disorder rates among categories of demographic characteristics: * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$, **** $p < 0.0001$.

[b] *Multiple disorders:* meeting criteria for at least two of major depression, generalized anxiety disorder, and panic attack. *Single disorder:* meeting criteria for only one of major depression, generalized anxiety disorder, and panic attack.

[c] MSA: Metropolitan Statistical Area.

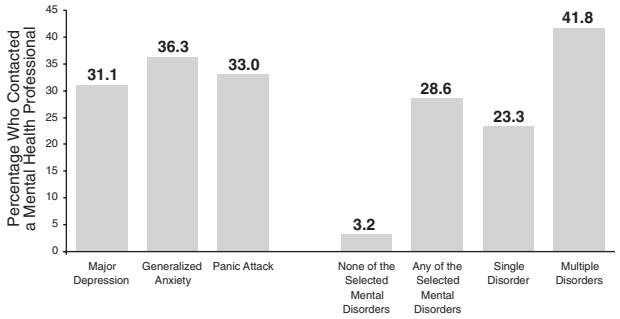


Figure 4. Percentage of Adults With and Without Selected Mental Disorders Who Contacted a Mental Health Professional, Past 12 Months: National Health Interview Survey, 1999.

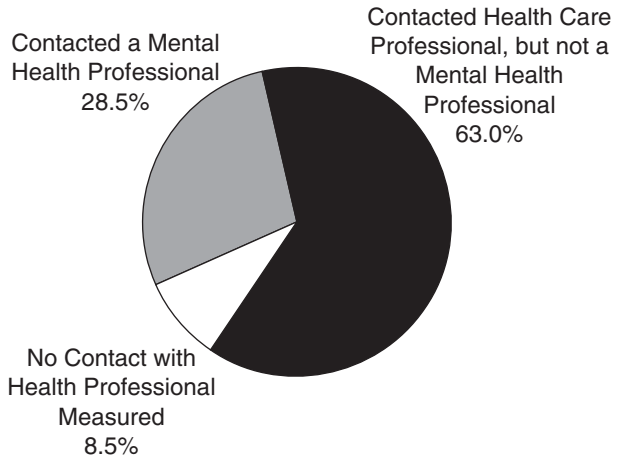


Figure 5. Percentage of Adults With Selected Mental Disorders Who Contacted a Health Care Professional, Past 12 Months: National Health Interview Survey, 1999.

with major depression, non-Hispanic White adults were more likely than non-Hispanic Black and Hispanic adults to have contacted a mental health professional, and college-educated adults were more likely than those with lower educational achievement to have contacted a mental health professional. For adults with generalized anxiety disorder, higher rates of contact were revealed among those with a college-level education compared with adults who did not finish high school and among those born in the United States compared with foreign-born adults. Finally, for adults with panic attack, those who were divorced, separated, and widowed were more likely to have contacted a mental health professional than those who were married.

Combining all three mental disorders, contact with a mental health professional was more likely for adults who were 25 to 64 years of age, were non-Hispanic White, or were college educated.

Like table 2 and earlier figures, figure 5 shows that 63.0 percent of adults with a mental disorder did seek contact with other health professionals, whereas only 28.5 percent sought a mental health professional within the past 12 months. Only 8.5 percent did not seek contact with any type of health care professional.

Health Insurance Coverage

Approximately 18.5 percent of adults with any of the three mental disorders were uninsured, compared with 13.1 percent for those without these disorders (figure 6). On the basis of these rates, an estimated 3.2 million adults living in the United States suffered from at least one of these mental disorders and were uninsured. In addition, the rate of uninsurance increases with the number of selected mental disorders within the past 12 months—16.7 percent among adults who met criteria for only one mental disorder and 23.1 percent among those who met criteria for more than one mental disorder. Another way to consider these data is to examine differences in mental disorder prevalence rates between insured and uninsured adults. Insured adults were less likely to have a mental disorder within the past 12 months than uninsured adults (8.3 vs. 12.0 percent; not shown).

Adults with a mental disorder who had insurance were more likely to seek contact with a mental health professional than uninsured adults with a mental disorder (29.8 percent vs. 23.4 percent, respectively). This difference in mental health care contacts associated with insurance status was greatest for adults with major depression; approximately 32.8 percent of insured adults with major depression contacted a mental health professional compared with 24.1 percent of those who were uninsured. The difference was not statistically significant for adults with generalized anxiety disorder or with panic attacks.

Table 2. Percentage of adults with selected mental disorders who contacted a mental health professional by demographic characteristics, past 12 months: National Health Interview Survey, 1999

Selected Demographic Characteristic[a]	Selected Mental Disorder			Number of Selected Mental Disorders[b]		Any of the Selected Mental Disorders
	Major Depression	Generalized Anxiety	Panic Attack	Multiple Disorders	Single Disorder	
Total	31.1	36.3	33.0	41.8	23.3	28.6
Age	****	****	*	***	**	****
18–24	24.6	25.1	26.0	33.4	17.7	21.5
25–44	35.1	41.3	35.4	46.9	25.1	31.9
45–64	33.1	39.0	35.5	42.2	26.0	30.7
65+	15.6	16.4	15.5	16.1	15.1	15.3
Sex					*	
Male	28.7	38.8	36.8	46.7	19.9	27.1
Female	32.4	35.1	31.4	40.0	25.0	29.3
Race/Ethnicity	**				****	***
Non-Hispanic White	33.2	38.3	34.8	43.3	25.6	30.6
Non-Hispanic Black	22.9	32.9	24.2	36.5	13.3	20.7
Non-Hispanic Other	26.7	37.0	47.0	40.9	18.4	25.7
Hispanic (any race)	23.9	25.8	23.6	35.2	15.9	20.9
Family Income						
$20,000 or more	30.0	36.1	30.9	41.3	23.2	27.7
Less than $20,000	33.0	37.2	37.3	41.8	24.0	30.5
Highest Level of Education	**	**			****	****
Less than high school	27.3	26.0	35.1	38.9	15.9	23.3
High school or some college	30.1	37.9	31.0	41.1	22.3	27.9
College graduate	41.4	48.5	40.9	54.0	35.3	39.0
Marital Status			*		*	**
Married	29.0	32.7	29.3	39.7	21.0	25.7
Divorced/Separated/	35.2	38.3	41.6	44.4	27.9	33.2
Widowed	30.4	40.5	32.0	42.4	23.0	29.0
Unmarried/Single					*	
MSA Size[c]	31.6	38.1	34.1	40.5	26.7	30.6
1 million or greater	30.3	32.4	31.7	40.3	21.8	26.9
Less than 1 million	31.6	38.1	33.2	45.8	19.4	27.4
Non-MSA		*				
Birthplace						
United States	31.3	37.5	33.8	42.6	23.6	29.0
Other	29.0	26.6	23.5	34.1	20.1	24.0

[a] Chi-square tests evaluating differences in rates of seeking a mental health professional among categories of demographic characteristics: * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$, **** $p < 0.0001$.

[b] *Multiple disorders:* meeting criteria for at least two of major depression, generalized anxiety disorder, and panic attack. *Single disorder:* meeting criteria for only one of major depression, generalized anxiety disorder, and panic attack.

[c] MSA: Metropolitan Statistical Area.

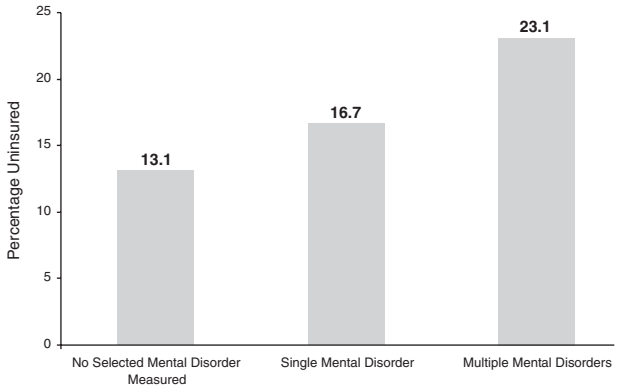


Figure 6. Percentage of Adults With and Without Selected Mental Disorders Who Are Not Covered by Health Insurance: National Health Interview Survey, 1999.

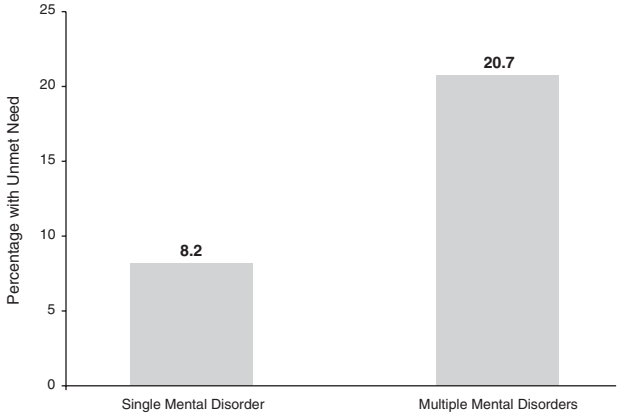


Figure 7. Percentage of Adults With and Without Selected Mental Disorders Who Experienced a Cost-Related Barrier to Needed Mental Health Care: National Health Interview Survey, 1999.

Unmet Mental Health Care Need Due to Cost

Among adults with at least one of the three selected mental disorders, 11.7 percent recognized a mental health care need that could not be met because of cost. Among adults with at least two of the three mental disorders, this estimate rose to 20.7 percent. Figure 7 presents data on the proportion of adults with cost-related barriers to needed mental health care; figure 8 compares insured and uninsured adults on this measure. As might be expected, health insurance status was associated with rates of cost-related barriers to needed mental health care. Approximately 27.0 percent of the uninsured adults with at least one of the three selected mental disorders had such a barrier, compared with 8.3 percent who were insured. This difference associated with health insurance status was greatest among adults with at least two of the three mental disorders, with nearly 40 percent of uninsured adults with multiple disorders reporting a cost-related barrier.

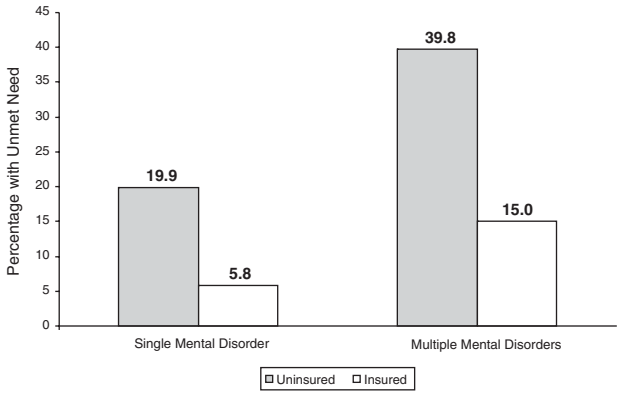


Figure 8. Percentage of Adults With and Without Selected Mental Disorders Who Experienced a Cost-Related Barrier to Needed Mental Health Care, by Health Insurance Coverage Status: National Health Interview Survey, 1999.

Mental Disorder and Other Long-term Health Conditions

Figure 9 presents rates of selected long-term nonpsychiatric health conditions among adults with and without a mental disorder. Rates of long-term nonpsychiatric health conditions were higher among those with any selected mental disorder relative to those without a mental disorder. Of adults with at least one of the three mental disorders, 61.7 percent experienced a long-term nonpsychiatric health condition, compared with 40.7 percent of adults who did not have a mental disorder.

Given the association between mental disorders and long-term nonpsychiatric health conditions, the previous analyses on health care coverage and health care contacts were reconsidered to examine the potential influence of mental disorders independent of other long-term conditions. The associations between mental disorders and health care coverage and between mental disorders and health care contacts were considered first for adults with other

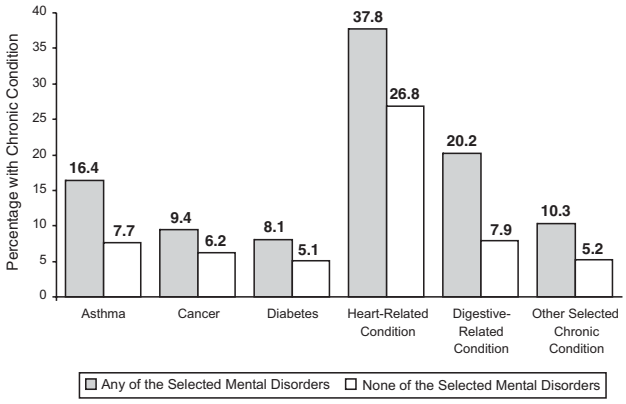


Figure 9. Rate of Other Selected Long-Term Health Conditions by any Selected Mental Disorder Status, Past 12 Months: National Health Interview Survey, 1999.

long-term conditions and then for adults without other long-term conditions (see table 3).

As might be expected, adults with a mental disorder were more likely to have contact with a mental health professional, whether or not they also had other long-term health conditions. But perhaps unexpected were results indicating that, regardless of other long-term health conditions, adults with a mental disorder were also more likely to visit nonpsychiatric medical specialists, visit an emergency room, have surgery, and be hospitalized overnight. That is, even among adults with long-term nonpsychiatric health conditions, health care use (based on these four measures) was more prevalent for adults who also had a mental disorder. Finally, regardless of whether other long-term health conditions were present, adults with mental disorders had higher rates of uninsurance than did adults without mental disorders.

Table 3. Proportion of adults with health care coverage and health care contact by long-term health status and presence of selected mental disorders: National Health Interview Survey, 1999[a]

	None of the Selected Long-Term Health Conditions		Any of the Selected Long-Term Health Conditions	
	None of the Selected Mental Disorders (%)	Any of the Selected Mental Disorders (%)	None of the Selected Mental Disorders (%)	Any of the Selected Mental Disorders (%)
Health Care Coverage, current				
Uninsured	16.3	20.5*	8.6	17.2*
Mental Health Care Contact, past 12 months				
Contact with a Mental Health Professional	2.8	26.4*	3.7	29.8*
Health Care Contact, past 12 months				
Visit to a Health Professional's Office	70.9	81.4*	89.9	91.3
Contact with General Doctor	54.9	61.2*	76.7	77.9
Contact with Medical Specialist	14.4	24.9*	36.5	46.5*
Visit to Emergency Room	12.1	24.5*	20.5	36.9*
Surgery	8.7	14.4*	16.8	24.1*
Overnight Hospitalization	5.1	10.5*	13.2	22.6*
Home Visitation by a Health Professional	0.5	1.5	3.2	4.8*

[a] *T*-tests evaluating differences between the two "mental disorders" categories within each long-term health condition category.
* $p < 0.05$.

Discussion

Mental Disorder Prevalence

The 1999 NHIS results reveal that approximately one of every 11 U.S. adults (approximately 8.8 percent) met criteria for at least one of the three mental disorders (major depression, generalized anxiety disorder, or panic attack) within the past 12 months. Almost three of every 100 adults in the United States (2.5 percent) experienced a combination of major depression, generalized anxiety disorder, or panic attack within the past 12 months. In fact, roughly 28.6 percent of adults meeting criteria for any one mental disorder also met criteria for at least one other disorder. Moreover, the current analysis suggests that approximately two-fifths of those meeting criteria for major depression or generalized anxiety disorder had mental health problems that interfered with life activities "a lot," while approximately three-fourths had a condition that interfered with their life at least "some."

Rates of generalized anxiety disorder and panic attack found here are similar to those reported by the NCS (Kessler et al., 1994) despite differences in the age composition of the populations studied (NHIS, but not NCS, included adults 65 years of age and older; NCS, but not NHIS, included adolescents 15 to 17 years old). However, the rates for major depression are substantially different—10.3 percent from the NCS versus 6.3 percent from the NHIS—and probably cannot be explained simply by differences in the age composition of the populations studied. (A reanalysis of the NCS data to achieve comparable populations is beyond the scope of this chapter.) Rather, slight differences in question wording between the NCS and NHIS may account for the difference. The NHIS used the abridged CIDI-SF instrument; the NCS used the full CIDI instrument. The primary difference between the instruments is that the CIDI-SF relies on two stem questions to identify major depression ("feeling sad, blue, or depressed" and "losing interest in most things like work, hobbies, or things you usually like to do for fun"), whereas the full CIDI instrument uses three stem questions (adding "feeling down in the dumps or gloomy"). The Epidemiologic Catchment Area Study (ECA), a five-site community survey that was a principal source for psychiatric morbidity information in the United States, also used a reduced set of stem questions, which came from the Diagnostic Interview Schedule (Robins, et al., 1981), to assess major depression. Like the NHIS, the ECA reported rates of major depression that were lower than NCS (Regier et al., 1993; Robins and Regier, 1991). This would suggest that the reduced set of stem questions administered by NHIS may explain the lower rates of positive screening for major depression.

Correlates of Mental Disorder

In general, the demographic and socioeconomic associations reported in this chapter are largely consistent with findings reported for other epidemiological studies. The present findings include higher rates of major depression, generalized anxiety disorder, and panic attack among women compared with men and lower rates among married adults compared with adults who were once married (i.e., divorced, separated, or widowed) or never married. In addition, the prevalence of mental illness varied substantially according to family income and highest level of education. The present analyses suggest that individuals on lower rungs of the socioeconomic ladder were more likely to meet criteria for mental disorder. For the most part, socioeconomic variation in mental illness prevalence has been widely observed in other epidemiological research as well, though the processes contributing to these associations are not completely understood (Dohrenwend et al., 1992).

Finding low rates of mental illness among the elderly may not be entirely surprising. Although depressive symptomatology may be related to older age, major depression appears less prevalent among the elderly (Beekman, et al., 1999). However, issues have been raised concerning the legitimacy of such findings. Methodological concerns regarding the elderly include an inability to participate effectively in a health interview and dynamic changes in relevant psychiatric symptomatology dependent on age (Beekman et al., 1999). Therefore, the present results concerning the elderly should be accepted with some degree of caution until these methodological concerns are resolved.

According to the 1999 NHIS data, foreign-born adults were less likely to meet criteria for mental illness relative to U.S.-born adults. Similar findings have been noted for other health domains, which may be due in part to the healthy immigrant effect (Chen, et al., 1996; Kopec, et al., 2001; Singh and Siahpush, 2001; Stephen, et al., 1994). Migration may be associated with protective factors that reduce the likelihood of psychiatric problems, including free practice of cultural/religious beliefs and traditions,

enhanced socioeconomic potential, access to extended family, and premigrative sociodemographic factors and individual qualities (Jablensky et al., 1994; McKelvey, et al., 1993). Cross-cultural issues in mental health assessment and treatment and the greater reluctance among people from some cultures to reveal emotional and behavioral experiences may also explain the current findings (Boehnlein and Kinzie, 1995; Jablensky et al., 1994).

Mental Health and Service Contact

The majority of adults (approximately three of every four) who met criteria for a mental disorder did not contact a mental health professional within the past year. In general, this finding is largely consistent with that reported in other epidemiologic investigations (Kessler et al., 1994, 2001; McAlpine and Mechanic, 2000; Regier et al., 1993; Wang et al., 2002). However, the rates of service contact reported here are higher relative to those observed in the NCS (Kessler et al., 1994). The latter study reported that approximately 11.5 percent of their mentally ill population used a mental health specialist, compared with 28.6 percent in the present study. This disparity may be due in part to the aforementioned differences in survey populations and may also be due to methodological and definitional issues. NCS's mental health specialist definition ("treated by a psychiatrist or psychologist") is less inclusive than that of the current study. In addition, NCS assessed a more exhaustive set of mental disorders, including alcohol and drug abuse disorders, that may be less amenable to contact with a mental health specialist. Finally, the focus of NCS was actual treatment received, as opposed to NHIS's focus on contact with mental health professionals.

In any event, the current study suggests that the majority of adults with a mental disorder do not seek contact with mental health professionals. This should not be surprising given previous research that suggests that mental illness tends to go untreated (Kessler et al., 1994, 2001; McAlpine and Mechanic, 2000; Wang et al., 2002). In addition, mental illness may be insufficiently treated or entirely undetected among a sizable number of mentally ill adults in medical treatment settings (Oquendo, et al., 1999; Wells, et al., 1996). A sizable proportion of mentally ill adults also prematurely drop out of treatment (Kessler et al., 2001).

Mental Health and Health Insurance Coverage

Analyses of health insurance coverage revealed not only that lack of coverage was associated with greater mental health morbidity but also that uninsured adults with a mental disorder were less likely than insured adults to contact a mental health professional. Uninsured adults with a mental disorder were approximately three-and-a-half times as likely not to be able to afford needed mental health care as those who were insured. A more startling public health concern, though, may be that almost one-tenth of all insured adults with a mental disorder (8.3 percent) still perceived unmet mental health needs because of cost. This may imply coverage deficiencies within the general health insurance system related to mental health.

Long-term Health Conditions and Mental Disorder

Approximately three-fifths of all adults who met criteria for a mental disorder had at least one of several selected long-term health conditions. Relative to adults without a mental disorder, this rate was more than 50 percent higher. Given the cross-sectional design of the survey, the directional processes contributing to either mental illness or long-term health conditions cannot be determined. Still, the analysis provides some insight into the association between classic medical conditions and mental health morbidity.

As expected, adults with a mental disorder were more likely to contact a mental health professional within the past 12 months. More surprising, perhaps, was that adults with a mental disorder were also more likely to use other health care services, such as nonpsychiatric medical specialists, emergency rooms, surgery teams, and inpatient hospital beds. As a result, higher rates of service contact were revealed among adults with both a mental disorder and another long-term health condition relative to those with just a nonpsychiatric long-term health condition.

Limitations

The current analysis was performed on household survey data covering a comprehensive set of health-related information, including mental disor-

der diagnostic evaluations. Therefore, presence of mental disorder was established through self-report to nonpsychiatric interviewers, rather than through clinical evaluations that are typically perceived as the gold standard. In addition, the CIDI-SF instrument has yet to be clinically evaluated to the same degree as the longer CIDI. Consequently, the prevalence rates reported in this study should be interpreted as approximations. In addition, the survey design limited the current analyses to a finite set of mental disorders and will have missed psychiatric cases that might have met criteria for other forms of mental illness.

Moreover, the estimates on mental disorder and health services contact do not take into account certain populations. The current sampling frame did not include homeless and institutionalized individuals, which suggests that the estimates reported here are underestimates of mental health morbidity in the entire U.S. population. The sensitive nature of mental health questions in the survey might also have produced underestimates (Epstein, et al., 2001; Lee and Renzetti, 1990). Additionally, because NHIS is a cross-sectional survey relying on retrospective assessment, the potential exists for underreporting of mental disorder symptoms and service contacts because of difficulties in recall.

Conclusions

The mental disorder and health care service contact estimates presented here are based on a large sample representative of the U.S. noninstitutionalized, civilian population. As a consequence, unlike community studies that do not rely on probability sampling techniques, the present results can be generalized to the target population.

Consistent with previous research, the results of the current study suggest that the majority of adults with a mental disorder do not seek or receive services from mental health professionals. For many adults with a mental disorder, this lack of mental health care is the consequence of cost-related access problems. Adults with any of the three disorders examined here were less likely to have health care coverage than adults without a mental disorder, and uninsured adults with a mental disorder were less likely to have mental health service contact and more likely to have perceived unmet mental health needs.

However, adults with a mental disorder do seek and receive health care services from other health professionals. The use of nonpsychiatric health care services was more prevalent among adults with a mental disorder, regardless of whether the adults had other long-term health conditions (but nonpsychiatric long-term conditions were also more prevalent among adults with a mental disorder). Therefore, policymakers interested in health care access and insurance issues may find that they need to pay special attention to the elevated needs of adults with mental disorders.

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